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| 10/016,940 | 12/13/2001 | Katsuhito Kitahara | P6397a | 3867 |

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| 20178 | 7590 | 02/21/2006 | KANG, ROBERT N |

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| 2622 | |

DATE MAILED: 02/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☐ Responsive to communication(s) filed on _28 December 2005_.

2a) ☒ This action is **FINAL**.     2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) _1-8,10-17 and 19-26_ is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-8,10-17 and 19-26_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _13 December 2001_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a) ☒ All　b) ☐ Some *　c) ☐ None of:

　　　1. ☐ Certified copies of the priority documents have been received.

　　　2. ☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
　　Paper No(s)/Mail Date ~~2210000~~

4) ☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

## DETAILED ACTION

### *Response to Arguments*

1.      Applicant's arguments filed 12/28/2005 have been fully considered but they are

not persuasive.

2.      Applicant has amended independent claims 1, 10, and 20 to contain the material

previously cited in claims 9 and 18.  However, because the arguments presented by the

applicant are considered unpersuasive and shall be refuted in the following section, the

rejection under 35 U.S.C. § 102(b) still stands.

        Applicant has added new claims 24 and 25, which embody the functionality of

claims 9 and 18, but applied to the method of claim 1 and the computer-readable

medium of claim 10.  Therefore, these new claims may be rejected on the same

grounds as claims 1 and 10.

3.      Applicant's argues on page 8, lines 1-4, that "the applicant's non-volatile storage

is not for program execution, as is each JVM in Hamzy, as indicated in column 6, lines

45-46 of that patent.  Rather, applicant's non-volatile storage stores print data according

to the claimed procedure."  Because the executable print job file includes both the

actual print data as well as the instructions to be read by the JVM, Hamzy does indeed

disclose storing print data in non-volatile storage.

4.      Applicant argues on page 8, lines 5-8, "Hamzy does not teach storing data in

non-volatile storage of a target printer, upon reading of the print job file."  Applicant has

ignored the Examiner's interpretation of Hamzy stated on page 6 lines 7-11, wherein the

Examiner states, "defining the host machine as a JVM running on the printer itself, upon

execution of the executable print job file, operationally equivalent to "the host device accessing the data storage file," the print job data is stored in the address space of the target printer. Hamzy provides ample support for the anticipation of this interpretation, disclosing in column 8, lines 8-11, "JVM 401 could be embedded within a printer device, hardcopy device, PDA, data processing system 300, etc., as a software component or as part of a virtual machine implemented on a chip." Therefore, Hamzy specifically teaches "a command data set that includes a command set, executable by the host device, to create a data storage command set, which, in turn, is executable by the target printer, for storing the print data in non-volatile storage in the target printer."

5.     Applicant argues that Hamzy does not teach the features of claims 2 and 11, stating, "each of claims 2 and 11 indicates that this data storage command set is included in the command data set and is executable by the target printer." Examiner, in an attempt to be as lucid as possible, will revert to simple case statements in order to clarify the argument made in the previous office action.

I.  executable print file = command data set

II.  JVM running on printer = target printer

III.  JVM executes executable print file = target printer executing command data set

IV.  FIG 12A shows executable print file code (command data set code)

c=cl.loadClass();

V.  Assigning value to class or variable = assigning value to block of memory = "storage command"

Therefore, command data set contains storage command.

6.      Applicant argues Hamzy does not teach the features of claims 3 and 12, stating "the data storage command set is created by a command set that is included in the command data and is executable by the host device." As stated in the previous office action, the executable print file is a **high-level language**, which contains **storage commands** that are **non-specific** to an individual machine. Therefore, the high-level storage commands must be **translated to low-level machine code specific to the printer.**

I. executable print file = command data set

II. executable print file (command data set) contains high level (Java bytecode) storage commands

III. JVM translates byte codes into low level machine specific commands.

Therefore, **translation process** qualifies as "creating the storage command set" for the specific machine.


## Claim Rejections - 35 USC § 102

1.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.      Claims 1, 2, 3, 10, 11, 12, 19, 20, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Hanzy (US-PAT 6604111).

Regarding claims 1, 10 and 20, Hamzy discloses a method, computer readable medium storing the aforementioned method, and apparatus for generating a Java executable data presentation file 1100 to be executed within a Java Virtual Machine 1101 to reproduce the desired data presentation output, shown in figure 11 as the hardcopy printout printed from printer 1102. Hamzy discloses in column 9 lines 48-51, "the process starts (step 500) when a user issues a print request to the JDK application (step 510) that processes the user print request 520." After the user gives the print instruction, Hamzy states in column 12 lines 37-46, "JDK application 411 initiates a print job, which is generated in JVM 401, which may include a software component similar to executable print job generator or executable data-presentation generator 407. JVM 01 generates executable print job file 11, and may temporarily store this file on client 108. Eventually JVM 401 transmits executable data-presentation job file 1100 to JVM 2202 located on server 104. Upon receiving the executable print job file, JVM 1101 executes the file in order to produce hardcopy output on printer 1102." Hamzy further discloses in column 13 lines 1-3, "JVM 1101 may also be an embedded virtual machine implemented in hardware, firmware, microcode, or read only code stored in printer hardware 1102." Since, as Hamzy states in column 6, lines 45-46, "the Java virtual machine (JVM) is a virtual computer component that resides only in memory," it is obvious that the printer as described by Hamzy which includes a JVM stores the code and data in memory which can be retained for continual usage, i.e., nonvolatile storage. Therefore, the executable print job file generation and execution system as disclosed by Hamzy is a "method of storing print data in non-volatile storage in a target printer."

With regards to the first limitation of the claims 1, 10, and 20, "a step for creating print data," Hamzy discloses in column 9, lines 58-60, "at some point in its initial processing of the print job request, JDK application 411 invokes a getPrintJob() method." Hamzy further states in column 8, lines 2-7, "application or applet 411 contains PrintJob class 412 and Graphics Class 413, which enable it perform some of the data-presentation processing. JVM 401 and the application or applet 411 share the Graphics class 404 and Font Class 405, which provide graphics environment information and methods for various data-presentation processes." Therefore, the application generates the print data for storage.

Regarding the second limitation of claims 1, 10, and 20, "a step for creating a command data set for storing the print data in the nonvolatile storage in the target printer," Hamzy's system creates a storage file which is a computer executable file; therefore the executable file inherently contains a command data set for the JVM to carry out. In the aforementioned embodiment where the JVM is embedded within the printer, the executable file contains a command set for the storage and use of the data within the target printer.

Regarding the limitation (d) requiring a method with "a file output step for storing the data storage file in a data storage medium readable by a host device, or for sending the data storage file to the host device via a communication path," Hamzy states in column 12 lines 40-42 that "JVM 401 generates executable print job file 11... and may temporarily store this file on client 108." Therefore the method as disclosed by Hamzy "stores the file in a data storage medium readable by a host device."

Regarding the second to last claim limitation, Hamzy discloses in figure 11 the host device running JVM 1101, which, upon reading the executable data-presentation job file 1100, sends the data to a plurality of data-presentation devices 1102-1104, specifically 1102, the target printer. The target printer as disclosed by Hamzy can either store the generated print data for further usage or print a hardcopy printout as shown in figure 11. Therefore the "data storage file, when read by the host device, causes the host device to transmit the print data to the target printer for storage in the nonvolatile storage therein."

With regards to the amended limitations once embodied in claims 9 and 18, Hamzy discloses an apparatus in colulmn 13, lines 1-3, "JVM 1101 may also be an embedded virtual machine implemented in hardware, firmware, microcode, or read-only code stored in printer hardware 1102. As stated earlier in this action, an example of pseudo-code contained within Hamzy's aforementioned executable print job file is given in figure 12A. The section beginning on line 3 commented as "load print job class file into JVM's class space" has instructions for declaring a class c and assigning it a value passed by the function call cl.loadClass("SpooledPrintJob"). As stated earlier, assigning a class or variable in high level programming language translates to assigning and addressing a block of memory within the JVM device's memory. Defining the host machine as a JVM running on the printer itself, upon execution of the executable print job file, operationally equivalent to "the host device accessing the data storage file", the print job data is stored in the address space of the target printer.

Regarding claims 2 and 11, an example of pseudo-code contained within

Hamzy's aforementioned executable print job file is given in figure 12A. The section

beginning on line 3 commented as "load print job class file into JVM's class space" has

instructions for declaring a class c and assigning it a value passed by the function call

cl.loadClass("SpooledPrintJob"). Since assigning a class or variable in high level

programming language translates to assigning and addressing a block of memory within

the JVM device's memory, and the spooled print job is the print job data, the "command

data set includes a data storage command set for storing the print data in the non-

volatile storage of the target printer."

In regards to claims 3 and 12, an example of pseudo-code contained within

Hamzy's aforementioned executable print job file is given in figure 12A. The section

beginning on line 3 commented as "load print job class file into JVM's class space" has

instructions for declaring a class c and assigning it a value passed by the function call

cl.loadClass("SpooledPrintJob"). These high level commands are translated by the

Java compiler into assembly and low level commands specific to the device on which

the JVM is running. Hamzy states in column 6, lines 55-65, "the compiled code is

executable on many processors, given the presence of the Java run-time environment.

These instructions are designed to be easy to interpret on any machine and easily

translated on-the-fly into native machine code." Broadly defined, the translation process

from java bytecodes to native machine code qualifies as "creating a data storage

command set," since each device running the JVM could possibly have a different memory space and addressing mode.

Regarding claim 19, Hamzy discloses in column 13, lines 30-39, "the processes of the present invention are capable of being distributed in a form of computer readable medium of instructions and a variety of forms... examples of computer readable media include recordable-type media such as floppy disc, a hard disc drive, a RAM, and CD-ROMs and transmission-type media such as digital and analog communication links." Therefore the claim 19 requirements that "computer readable data storage medium ... comprises a compact disc, floppy disk, hard disk, magnetic tape, or electromagnetic carrier wave," are explicitly anticipated by Hamzy.

In regards to claim 21, Hamzy's apparatus as depicted in figure 8 meets the functional requirements of the cited claim. In step 830 the executable print job generator outputs source code statements to the executable print job file for AWT calls; this step is essentially generating the print data as well as the storage command sets, since they are both encapsulated within the executable file. The preceding and following steps 820 and 840 attach a header and footer, thus the file is "adapted to be executed by the target printer to store the print data." Finally the executable print job generator 850 compiles the executable print job file, thus meeting the requirement that "the file generator combines the data storage command set and the print data to create the data storage file."

With regards to new claims 25 and 26, the applicant states on page 8, paragraph

3, lines 8-9, "each of new claims 25 and 26 combines the features of 2/11 and 3/12."

Therefore, because Hamzy anticipates claims 2 and 11, 3 and 12, and 1 and 10, upon

which claims 25 and 26 depend, Hamzy inherently anticipates the method of claim 25

as well as the method encoded on a computer readable medium as claimed in claim 26.


### *Claim Rejections - 35 USC § 103*

3.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.


4.      Claims 4, 5, 6, 7, 8, 13, 14, 15, 16, 17, and 22-24 are rejected under 35 U.S.C.

103(a) as being unpatentable over Hamzy (US-PAT 6604111) in view of Chan.

Hamzy discloses a method in column 12 lines 44-46 and lines 50-52, "upon

receiving the executable print job file, JVM 1101 executes the file in order to produce

hardcopy output on printer 1102... Alternatively, JVM 1101 executes the executable

data-presentation file to produce output on display 1103 or data-presentation device

1104." Hamzy states in column 12; line 30-33, "actual hardware and software

configurations for the origin and destination of the print job, may vary depending on the

user's computing environment."

Hamzy does not expressly describe a data transmission command set for sending storage command set and print data to the target printer, and thus did not specify that communication parameters for connecting the host device with the target printer are contained in the aforementioned data transmission set.

Chan (see reference U on form PTO-892) discloses on supplementary website (V) in section e151 a method for sending a datagram to a known IP address, socket, or port. This known IP address, socket, or port, when taken into the context of the claimed Hamzy invention, could be any of a plurality of network enabled or directly connected data-presentation devices, therefore meeting the limitations of claims 4, 5, 13, and 14, wherein "the command set data includes a data transmission set for sending the data storage command set and the print data to the target printer."

Furthermore, the send datagram function requires that the address, socket, or port identifier be passed as a parameter into the function, therefore claims 6 and 15, requiring " the data transmission command set comprises communication parameters for connecting the host device with the target printer" are also met.

The address of the data-presentation device or target printer can be either hard-coded into the executable print job file or may prompt the user through the JVM for communication settings, thus meeting the limitations of claims 8 and 17, wherein the executable command set "enables inputting the communication parameters including communication settings." The stated Java package was available in Java version 1.3, released in 1998.

Chan and Hamzy are combinable because they both deal explicitly with the Java

programming language by Sun Microsystems.

At the time of the invention, it would have been obvious to one of normal skill in

the art to include a "data transmission command set", such as the send datagram

function as disclosed by Chan, containing the interface address of the target printer, in

the executable print job file generated by the system patented by Hamzy.

The motivation for this modification would be to allow the user to specify a

plurality of printers or data-presentation devices to receive the print data, thus allowing

the user to send to all or some of the various devices communicably attached to the

JVM.

Therefore it would have been obvious to combine Hamzy with Chan to obtain the

invention as specified in claims 4, 5, 6, and 13, 14, 15.

Specifically regarding dependent claims 7 and 16, the aforementioned Chan

modified Hamzy method comprises a host Java Virtual Machine 401 generating an

executable print job file 1100 containing data transmission command set instructions as

taught by Chan, which, upon execution by Java Virtual Machine 1100, sends packets of

data to a location specified by user input or by hard-coded parameters to various

printers 1102 or other data presentation devices 1103-1104.

The recited Chan modified Hazmy method does not expressly disclose an

executable command set which "detects the communication parameters and sends the

data storage command set and print data to the target printer according to the detected

communication parameters."

Chan also teaches in reference W a Java package available in Java 1.3,

released in 1998, which contains functions for discovering all available print services

and parameters.  Chan discloses in lines 1-3 a method to discover all available print

services, in lines 4-6 a method to discover the machine default printing service, in lines

7-11 a method to find all services which can support a specific input format, in lines 12-

17 a method to find a particular printer service by name, and in lines 23-28 a method to

find all services which support a set of print job capabilities.  These functions return

values to be used as parameters for print data or datagram/packet transmission readily

available in the Java.net or Java.print packages.

Chan and Hamzy are combinable because they both deal explicitly with the Java

programming language by Sun Microsystems.

At the time of the invention, it would have been obvious to one of normal skill in

the art to include the PrintServiceLookup functions as taught by Chan to "automatically

detect the communication parameters" for the target printer and passing these values

as parameters to the transmission instructions in the executable print job file generated

by the system patented by Hamzy.

The motivation for this modification would be to allow the automatic detection of

all available print or data-presentation devices communicably connected to the Java

Virtual Machine, making the printing process completely automatic.  Furthermore, by

utilizing the other functions for print parameters such as job capability, print service

name, and input format, user input is enabled for selecting an appropriate print device.

Thus rejected claims 8 and 17 are also anticipated by this combination.

Therefore it would have been obvious to combine Hamzy with Chan to obtain the

invention as specified in claims 7 and 16 as well as in the rejected claims 8 and 17.


In regards to claims 22, 23, and 24, an apparatus utilizing the aforementioned

Chan modified Hamzy method comprises a host Java Virtual Machine 401 generating

an executable print job file 1100 containing data transmission command set instructions

as taught by Chan, which, upon execution by Java Virtual Machine 1100, sends packets

of data to a location specified by user input or by hard-coded parameters to various

printers 1102 or other data presentation devices 1103-1104.

The recited Chan modified Hazmy apparatus does not expressly disclose an

executable command set which "detects the communication parameters and sends the

data storage command set and print data to the target printer according to the detected

communication parameters."

Chan also teaches in reference W a Java package available in Java 1.3,

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and parameters.  Chan discloses in lines 1-3 a method to discover all available print

services, in lines 4-6 a method to discover the machine default printing service, in lines

7-11 a method to find all services which can support a specific input format, in lines 12-

17 a method to find a particular printer service by name, and in lines 23-28 a method to

find all services which support a set of print job capabilities.  These functions return

values to be used as parameters for print data or datagram/packet transmission readily

available in the Java.net or Java.print packages.

Chan and Hamzy are combinable because they both deal explicitly with the Java

programming language by Sun Microsystems.

At the time of the invention, it would have been obvious to one of normal skill in

the art to include the PrintServiceLookup functions as taught by Chan to "automatically

detect the communication parameters" for the target printer and passing these values

as parameters to the transmission instructions in the executable print job file generated

by the system patented by Hamzy.

The motivation for this modification would be to allow the automatic detection of

all available print or data-presentation devices communicably connected to the Java

Virtual Machine, making the printing process completely automatic. Furthermore, by

utilizing the other functions for print parameters such as job capability, print service

name, and input format, user input is enabled for selecting an appropriate print device.

Thus claims 22, 23, and 24 are encompassed by this modification.

Therefore it would have been obvious to combine Hamzy with Chan to obtain the

invention as specified in claims 22, 23, and 24.


### *Conclusion*

5.     **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

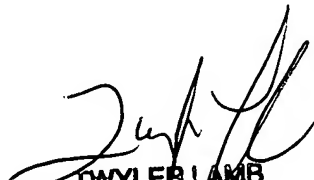than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Robert N. Kang whose telephone number is (571) 272-

0593. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Edward Coles can be reached on (571)272-7402. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

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Business Center (EBC) at 866-217-9197 (toll-free).

RNK

TWYLER LAMB
PRIMARY EXAMINER